

Application No. 10/825,371
Reply dated August 29, 2005
Response to Office Action dated March 28, 2005

AMENDMENTS TO THE DRAWINGS:

A new figure, Figure 3, has been added to show that the sealing ring enters the first chamber.

REMARKS/ARGUMENTS

Description of amendments

Claims 10-14 are now pending and under examination. Applicant has amended claims 10 and 14. No new matter has been added.

A new figure, Figure 3, has been added to show that the sealing ring enters the first chamber.

The specification has been amended to add the description of Figure 3.

Interview summary

Applicant's counsel greatly appreciates the courtesy extended by Examiner Kim during the course of an interview conducted on August 23, 2005. In the interview, Examiner Kim and Applicant's counsel discussed the cited references.

Objection to the drawings

The objection to the drawings is overcome by the new figure, Figure 3, , which shows that the sealing ring enters the first chamber.

Rejection under 35 U.S.C. §103(a)

Claims 10-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shea (U.S. Patent 4,166,084) in view of Swank (U.S. Patent 2,543,590). For the following reasons, Applicant respectfully requests reconsideration and withdrawal of the rejection.

As discussed in the interview, the cylindrical section of each independent claim (claim 1 or 14) has the shape of a cylinder. The section of Shea, which contains and seats the valve stopper (7), does not have the shape of a cylinder.

On the contrary, this section of Shea has a frustum shape, i.e. a truncated conical shape, which is necessary for functioning as a seat for the correspondingly frustum-shaped valve stopper (7). Accordingly, the cylindrical section of each independent claim is not taught or suggested by the cited references. Therefore, each independent claim (and therefore each dependent claim) cannot be rendered obvious by the cited references.

As discussed in the specification, this difference is critical for accomplishing an object to be solved by the present invention, namely to avoid any dripping of the medium being sprayed, in particular when stopping a spraying operation. No comparable effect is reached by the bubble maker of Shea. To stop the flow of medium, the piston (6) of Shea is moved until the conical stopper (7) abuts its conical seat. Only then the flow of medium is stopped. However, no more movement of the piston (6) is possible after the piston has reached its medium flow stopping position, and thus no further underpressure can be generated to cause a backflow of medium from the nozzle, i.e. the volume in the liquid pathways (4) is not increased, but remains constant after the piston has reached a position in which it stops the supply of medium.

It was stated in the latest Office Action (page 4, lines 13-14) that Figure 1 of Shea shows a cylindrical-shaped section below the frustum-shaped portion. However, this cylindrical-shaped section cannot be the cylindrical section of claims 10 and 14, because it cannot meet the limitation—"the first end portion of the control piston is guided with the sealing ring in the cylindrical section of the casing." If a sealing ring were provided between this cylindrical-shaped section and the conical stopper (7) of Shea, the liquid would not be able to flow from the inlet (8) to the outlet orifice (20). Additionally, a sealing ring cannot be installed on the conical stopper (7).

In light of the foregoing remarks, this application is considered to be in condition for allowance, and early passage of this case to issue is respectfully

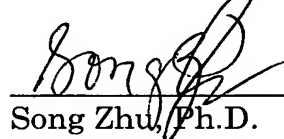
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requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #028972.53936US).

August, 29, 2005

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Song Zhu', is written over a horizontal line.

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